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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/729,513	12/04/2000	Sanjay K. Yedur	E0802	4563

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EXAMINER

FERNANDEZ, KALIMAH

ART UNIT PAPER NUMBER

2881

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/729,513

Applicant(s)

YEDUR ET AL.

Examiner

Kalimah Fernandez

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**  
***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-4, 9, 11-17, and 24 are rejected under 35 U.S.C. 102(a) as being anticipated by US Docu. 2002/0104963 issued to Mancevski.
3. Mancevski discloses an atomic force microscope (pg.1, col.1, para.0001).
4. Mancevski discloses a detection tip (202) (pg.7, col.2, para. 0097).
5. Mancevski discloses a defect repair system (pg.2, col.1, para. 0017).
6. Mancevski discloses the defect repair system repairs defect in a substrate at location determined by the scanning probe microscope (pg. 7, col.2, para. 0100).
7. As per claims 2 and 15, Mancevski discloses the defect repair system repairs defects using the detection tip (202) of atomic force microscope (pg.7, col.2, para. 0098).
8. As per claims 3 and 16, Mancevski discloses the defects are mechanically removed from the substrate using the detection tip (pg. 8, col.1, para. 0103, lines 18-20).
9. As per claims 4 and 17, Mancevski discloses an atomic force microscope (pg. 3, col.1, para. 0048).

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10. As per claims 9, 12 and 24, Mancevski discloses the system locates defects by obtaining both topographical and compositional information concerning the substrate (pg.7, col.2, para. 0100).

11. As per claim 11, Mancevski discloses the defect repair system (210) has fixed position relative to the detection tip (202) of the scanning probe microscope (pg.7, col.2, para.0099).

12. As per claims 13-14, Mancevski discloses an atomic force microscope, which is used to selectively processing the semiconductor substrate to repair defects at locations on the semiconductor (pg.7, col.2, para. 0100).

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 6-7,10, 20-21,23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mancevski and US Pat 6,197,455 issued to Yedur et al.

15. Mancevski teaches the claimed invention except for the application of a voltage difference (i.e. creating an electrostatic charge in a portion of the substrate), which causes the defect to be oxidized away.

16. However, Yedur et al teaches the application of a voltage difference, which causes the defect to be oxidized away (see col.6, lines 52-58).

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17. It would have been obvious to a person having ordinary skill in the art to combine the teachings of Manceski and Yedur et al since Yedur et al teaches precision, accurate corrections of defects (col.2, lines 54-62).

18. As per claim 23, Yedur et al teaches the use of another instrument to determine the defect's location (col.6, lines 5-19).

19. Claims 5 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mancevski and US Pat No 5,866,807 issued to Elings et al.

20. Mancevski teaches the claimed invention except for a diamond tip and forcing the tip against the substrate with a normal force that is at least about ten times greater than the normal force applied to detect the defect.

21. However, Elings et al teaches a diamond tip (col. 6, lines 4-26). In addition, Elings teaches the application of a force at least about ten times greater than the normal force (col.2, lines 32-35).

22. It would have been obvious to an ordinary artisan to combine the teachings of Mancevski and Elings et al since Elings et al discloses the ability to both perform indentations and image said indentation (col.5, lines 36-44).

23. Claims 8,10, 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mancevski and US Pat No 4,896,044 issued to Li et al.

24. Mancevski teaches the claimed invention except for heating the detection tip.

25. However, Li et al discloses the application of a voltage bias for heating the tip to cause vaporization on the substrate (col.2, lines 11-15; col.5, lines 20-30).

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26. It would have been obvious to an ordinary artisan to incorporate the teachings of Li et al into Mancevski since Li et al teaches correction of defects (i.e. irregularity in a substrate) by in a easy, efficient manner (see col.4, lines 10-20).

27. In addition, Li et al teaches the application of an electrostatic bias to the substrate (see col.4, lines 22-26).

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 703-305-6310. The examiner can normally be reached on Mon-Thus between 8:30am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on 703-308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

kf  
May 29, 2003

  
JOHN R. LEE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800